REMARKS

By way of this amendment, claim 1 has been amended to recite with greater clarity that the visual stream incorporates patterns and at the same time changes colors in concert with the repetitive sleep-inducing sound. Support for this amendment is found in the specification as filed at page 3, line 21 – page 4, line 3, and as such it is submitted that no new matter has been added to the application by way of this amendment.

Currently, claims 1, 4 and 6 stand rejected under 35 U.S.C. §103(a) over Yoshida et al. (US 5,982,414) in view of www.stanford.edu/~dement/sleeplinks.html and Meier et al. (US 5,496,962 A).

The basis of the rejection is articulated in Paper No. 20071121, section 3, pages 2-4 and relies on Yoshida for disclosing the invention of claim 1 with the exception of a web/internet link to information of sleep related research, sleep products and a sleep discussion chat room and a visual stream changing colors in concert with the sound. The stanford.edu web link is provided to supplement the limitations of Yoshida in regard to such a web/internet link. Meier is cited for disclosing a visual stream that changes colors in concert with the sound.

In response to remarks made of record on October 1, 2007, in section 4, page 4 of the outstanding Office Action it is stated that Yoshida is being interpreted as disclosing that colors are turned on and off at certain frequencies to present a user with the color blue and a blackened screen at certain frequencies. It continues "Taking this concept from Yoshida, one of ordinary skill would recognize that changing colors at frequencies found to help a user fall asleep, would aid the system in conveying these frequencies to the user." (Paper No. 20071121, section 4, page 4).

In contrast to the prior art reference combination, pending independent claim 1 now recites that the visual stream includes patterns and changes colors in concert with a repetitive

sleep-inducing sound. Applicant respectfully submits that incorporation of patterned changing colors along with sound to induce sleep is not a predictable result based on the prior art reference combination, in particular Yoshida, on the basis that dynamic patterns of light and color change are well known to be stimulative and not sedative. Scientific research as to attention stimulation associated with dynamic patterns and colors as being stimulative of an individual's attention are well known and consistent with routine experience that one quickly becomes bored with a screen pulsating between blue and deactivated, and imagery changing as to both color and pattern as well as being pulsed stimulates one's attention owing to a perceived sense of motion as well as color. Representative research articles as to visual stimulation of patterns as opposed to a somnolative effect being provided are attached hereto including Lewis et al., "Patterns of Fixation in the Young Infant", Child Development, 1966, Vol. 37, (337-341); Cohen, "Attention-Getting and Attention-Holding Processes of Infant Visual Preferences", Child Development, 1972, vol. 43, 869-879; and Nuechterlein et al., "Visual sustained attention: image degradation produces rapid sensitivity decrement over time", Science, vol. 220, issue 4594, 327-329, 1973.

With the above limitation added to claim 1 by way of this amendment, Applicant submits that the stimulative effects associated with visually changing patterns and colors in concert with sleep-inducing sounds actually has a stimulative effect that operates at cross purposes to the holdings as to Yoshida detailed in Paper No. 20071121, section 4, page 4. The secondary references of the Stanford website and Meier are respectfully submitted to not bolster Yoshida as to these limitations.

In light of the above amendments and remarks, reconsideration of the rejection as to claims 1, 4 and 6 under 35 U.S.C. §103(a) over Yoshida in view of www.stanford.edu/~dement/sleeplinks.html and Meier et al. is respectfully requested.

Summary

Claims 1, 4 and 6 are currently pending in this application. These claims are submitted to be in allowable form and directed to patentable subject matter. Reconsideration and withdrawal of the rejection as to these claims and the passing of this application to allowance are requested. Should the Examiner have any suggestions as to how to improve the form of any of the pending claims, he is respectfully requested to contact the undersigned attorney responsible for this application.

Dated: February 11, 2008

Respectfully submitted,

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ATTENTION-GETTING AND ATTENTION-HOLDING PROCESSES OF INFANT VISUAL PREFERENCES

LESLIE B. COHEN

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COHEN, LESLIE B. Attention-getting and Attention-holding Processes of Infant Visual Preferences. CHILD DEVELOPMENT, 1972, 43, 869–879. *In a new procedure that permitted the independent assessment of attention-getting and attention-holding processes of various stimulus parameters, 18 male and 18 female 4-month-old infants were exposed to checkerboards varying in size and number of squares. The major finding was that the latency of turning toward the pattern was determined more by the size of the checkerboard than by the number of checks, while the duration of fixation was more a function of the number of checks than the size. Infants also tended to turn faster toward and look longer at the right side than the left. The results supported the contention that infant attention should be divided into separate attention-getting and attenion-holding processes.*

A common procedure for investigating infant visual attention has been to present a series of visual patterns for several trials of fixed duration and to record infants' total fixation time per trial. While this procedure has yielded valuable information on infants' preferences for patterns (e.g., Brennan, Ames, & Moore 1966; Kagan & Lewis 1965) and changes in preferences over time (e.g., Caron & Caron 1969; Cohen, Gelber, & Lazar 1971; Pancratz & Cohen 1970), it has also obscured information. For example, the direction in which the infant is looking before a trial begins will

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PATTERNS OF FIXATION IN THE YOUNG INFANT

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Thirty-two 24-two-week-old infants each received 2 types of visual stimulation while observers recorded their fixation patterns. 5 measures were obtained: total fixation time, longest fixation, first fixation, number of fixations, and latency to first fixation. The results indicate that longest and first fixations were better indexes of discrimination than was total fixation. Human faces evoked 1 or 2 long fixations, while designs elicited many short fixations. Finally, there were sex differences in fixation patterns.

Recent interest in infant perception has led to a proliferation of techniques for measuring individual, sex, and developmental differences in distribution of attention to various stimuli. Most investigators have used the paired comparison technique (Fantz, 1962; 1963a; 1963b; 1964; Hershenson, 1964; Saayman, Ames, & Moffett, 1964; Stechler, 1964) in which the infant is presented with two stimuli simultaneously. Preference is measured in two ways: (1) orientation of the head and (2) the amount of time spent looking at each of the stimuli. The alternative strategy presents single stimuli, and preference is evaluated by the differential amount of time the child orients to each of the stimuli (Berlyne, 1958; Kagan & Lewis, 1965; Lewis, Meyers, Kagan, & Grossberg, 1963). Both techniques require a decision about measurement procedures. The popular index of attention to a stimulus is the total time the infant fixates on the stimulus. This variable can be operationally defined as the amount of time the stimulus overlaps the infant's cornea. Quantification of this variable varies from the use of human ob-

Michael Lewis' address: Fels Research Institute, Yellow Springs, Ohio. This study was supported by the National Institute of Mental Health, U.S. Public Health Service Grants HD-00868, FR-00222, FR-00537 and M-4464. Appreciation is given to Helen Campbell and Sara Jane Spaulding for data collection and analysis.

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ARTICLES

Science, Vol 220, Issue 4594, 327-329

ARTICLES

Visual sustained attention: image degradation produces rapid sensitivity decrement over time

KH Nuechterlein, R Parasuraman, and Q Jiang

Perceptual sensitivity to a visual target presented in a random continuous sequence of targets and nontargets decreased rapidly over time when stimuli were highly degraded visually but not when moderately degraded or undegraded. Large declines in sensitivity, independent of changes in response criterion, were found after only 5 minutes of observation. These rapid decrements of sensitivity to degraded targets seem to result from demands on the limited capacity of visual attention.